

FIELD INVESTIGATIONS OF UNCONTROLLED HAZARDOUS WASTE SITES

FIT PROJECT

**TASK REPORT TO THE
ENVIRONMENTAL PROTECTION AGENCY
CONTRACT NO. 68-01-6056**

(Red)
ORIGINAL

A Preliminary Assessment
of

Hercules, Incorporated
Hopewell, VA
Plant Landfill
TDD No. F3-8201-21
EPA No. VA-46

Preparation Date: March 18, 1982



Presented to: Linda Y. Boornazian, Acting DPO
EPA Region III

Prepared by:


ecology and environment, inc.

International Specialists in the Environmental Sciences

Hercules, Incorporated
Hopewell, VA
Plant Landfill
TDD No. F3-8201-21
EPA No. VA-46

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(Red)

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SUMMARY AND RECOMMENDATIONS

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Summary

The Hercules Hopewell Plant produces cellulose derivatives, fibres (cotton) and anionic polymers. The company operates an incinerator and landfill on the plant property. All burnable materials are incinerated and ash is disposed of in the company landfill. The landfill is operated as a trench fill for non-burnable trash, metal debris, and offspec anionic polymers. The company also disposes of emptied and cleaned drums from raw material shipment in the fill. Wastes such as contaminated cotton, wet cleanings, rejects etc. are disposed of at Shoosmith Landfill. The State of Virginia has permitted the fill and conducts periodic inspections. No problems have been identified with the operation of the site.

During the site visit it was learned that Hercules also operates a small sand bed used to evaporate a small quantity of solvents and cupric ammonia waste generated by a lab on site. The residues left on the sand bed are incinerated. However, the sand bed is lined with plastic which may allow a small quantity of solvents to pass through. This potential problem would best be addressed by the State during a RCRA or routine industrial inspection.

Recommendations

Due to the acceptable operation and nature of the fill, it is recommended that no further action be taken at this site and that this case be removed from the Dumpsite Program. However, it is recommended that the State be made aware of the possible improper handling of lab waste solvents.

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SITE BACKGROUND SUMMARY

History

The Hercules, Incorporated Hopewell Plant was built in 1916. Hercules purchased the facility in 1926 and produces cellulose derivatives, cotton fibres and anionic polymers. Prior to the Hercules operation the facility was operated as part of the DuPont Gun Cotton Facility which encompassed a good portion of the City of Hopewell.^{1, 2}

Hercules has been using on site disposal facilities since 1926. All materials disposed of on site have been classified as non-hazardous. Burnable trash, debris and wastes are incinerated on site in an "Air Curtain" or "Pit Type" incinerator. The incinerator ash has been filled on site. The landfill is located near the southwestern border of the property overlooking Cattail Creek.³ The materials disposed of in this fill area consist of metal debris, plastics, cellulose products (FDA approved), cardboard cartons and drums.¹ All drums are washed and rinsed in the production area and tagged for disposal. The drums are then crushed at the landfill and buried.^{2, 3} Off spec anionic polymers have also been disposed of in the landfill. This disposal has ² been approved by the State Health Department and is performed so that the polymer is mixed with incinerator ash and other debris. Presently Hercules holds a State permit to operate a three acre landfill on site and is in compliance with all permit requirements.^{1, 2} Past disposal prior to the State permitting program, took place on adjacent land which consists of approximately five acres.

In addition to the above mentioned on site disposal, the facility also maintains a lab solvent evaporation pit. The pit is approximately 20 feet x 20 feet x 3 feet, and consists of a plastic lined sand bed. Lab solvents and cupric ammonia are dumped on the bed. After the solvents have evaporated the residue is incinerated on site.^{2, 3}

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Liquid production wastes are either reclaimed or pass through a treatment plant prior to being discharged to the Regional Wastewater Treatment Plant. Sludges generated by the treatment process are stored in on-site lagoons. RCRA tests have been performed on this sludge and it doesn't meet the specifications of a hazardous waste characteristics, D001 through D017. Hercules, Incorporated has filed with EPA for permission to landfill these sludges according to State requirements.^{1, 2}

Geology/Hydrology

The Hercules, Incorporated Landfill is situated in an area where groundwater is estimated to be 20-40 feet below surface. The soil permeability is said to be moderate. Bedrock consists of unconsolidated material at a depth of greater than five feet. Groundwater is estimated to flow to the east-northeast.^{1, 4} There are no groundwater wells on the facility or in the immediate area.⁵

The landfill trench in operation is approximately twenty feet deep. The exposed cut showed clay loam soil the entire length of the cut. A small amount of standing water was noted in the trench.³

Critical Environment

The Hercules facility is adjacent to Cattail Creek and Bailey's Creek. Both streams have minor wetlands associated with them and at the confluence of Baileys Creek and the James River minor tidal flats are encountered.^{3, 4} Baileys Creek was contaminated with kepone from a P.O.T.W. discharge during the 1970's.

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Waste Type and Quantity

Hercules, Incorporated has disposed of waste on-site since 1926. The following breakdown of waste provides an estimate on waste and quantity:

Bulky ferrous metals - 2 tons/yr
Other ferrous metals - 1 ton/yr
Non-ferrous metals - 1 ton/yr
Incinerator ash - 12 tons/yr
Cellulosic sludge - 287 tons/yr
Off spec anionic polymers - occasional

Presently the cellulosic sludge is transported off-site and disposed of at Shoosmith Landfill. This sludge has been subjected to RCRA testing and does not qualify as a hazardous waste.^{1, 2}

Demographics

The Hercules, Incorporated facility is located in a heavy industrial section of the City of Hopewell. Although the entire area is served by public water supply, 23,000 - 24,000 people reside within a 3 mile radius of the site.⁵

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FIELD TRIP REPORT

Introduction

FIT Region III met with Hercules, Incorporated officials and conducted a cursory survey of the landfill site on January 26, 1982. The weather during the visit was breezy, low 30°'s and the ground was partially covered from recent snow and ice storms.

Contacts

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Site Observations

- o Hercules, Incorporated provided several aerial photographs of their property. These photographs showed no areas which appeared to be used for disposal other than the areas permitted.
- o Landfill contained one active cell. Visible fill material consisted of ash, metal and fiber drums.
- o Active trench had a small area of standing water.
- o Excavated dirt was being stored and used as fill and capping material.
- o Incinerator was in operation.
- o Drum crusher was clear of liquids and no stains were noted.
- o Inactive fill area was graded and vegetated.
- o No leachate outbreaks were noted.
- o HNU and company operated OVA readings were at background.
- o The solvent evaporation bed was ice and snow covered.
- o Mr. Kirtley stated that the caustic chlorine plant used to produce asbestos filters which were dewatered, deposited in plastic bags and fiber drums and were buried on site.



POTENTIAL HAZARDOUS WASTE SITE IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION

III

SITE NUMBER (to be assigned by HQ)

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME Hercules Incorporated Plant Landfill		B. STREET (or other identifier) P.O. Box 271	
C. CITY Hopewell	D. STATE VA	E. ZIP CODE 23860	F. COUNTY NAME Prince George
G. OWNER/OPERATOR (if known) 1. NAME [REDACTED]		2. TELEPHONE NUMBER 804-541-4395	
H. TYPE OF OWNERSHIP <input type="checkbox"/> 1. FEDERAL <input type="checkbox"/> 2. STATE <input type="checkbox"/> 3. COUNTY <input type="checkbox"/> 4. MUNICIPAL <input checked="" type="checkbox"/> 5. PRIVATE <input type="checkbox"/> 6. UNKNOWN			

I. SITE DESCRIPTION

Facility produces cellulose derivatives and disposes of non-hazardous waste on site.

J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.) Eckhardt	K. DATE IDENTIFIED (mo., day, & yr.) 11/1/79
--	---

L. PRINCIPAL STATE CONTACT 1. NAME Jim Saunders	2. TELEPHONE NUMBER 804-786-7073
---	-------------------------------------

II. PRELIMINARY ASSESSMENT (complete this section last)

A. APPARENT SERIOUSNESS OF PROBLEM <input type="checkbox"/> 1. HIGH <input type="checkbox"/> 2. MEDIUM <input type="checkbox"/> 3. LOW <input checked="" type="checkbox"/> 4. NONE <input type="checkbox"/> 5. UNKNOWN	
B. RECOMMENDATION <input checked="" type="checkbox"/> 1. NO ACTION NEEDED (no hazard) <input type="checkbox"/> 2. IMMEDIATE SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED FOR: b. WILL BE PERFORMED BY: <input type="checkbox"/> 3. SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED FOR: b. WILL BE PERFORMED BY: <input type="checkbox"/> 4. SITE INSPECTION NEEDED (low priority)	

C. PREPARER INFORMATION 1. NAME Garth Glenn	2. TELEPHONE NUMBER 609-665-1515	3. DATE (mo., day, & yr.) 2/22/82
---	-------------------------------------	--------------------------------------

III. SITE INFORMATION

A. SITE STATUS <input checked="" type="checkbox"/> 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.) <input type="checkbox"/> 2. INACTIVE (Those sites which no longer receive wastes.) <input type="checkbox"/> 3. OTHER (specify): (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)		
B. IS GENERATOR ON SITE? <input type="checkbox"/> 1. NO <input checked="" type="checkbox"/> 2. YES (specify generator's four-digit SIC Code):		
C. AREA OF SITE (in acres) Disposal - 3 acres active, approx. 5 acres inactive.	D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES 1. LATITUDE (deg.-min.-sec.) 2. LONGITUDE (deg.-min.-sec.)	
E. ARE THERE BUILDINGS ON THE SITE? <input type="checkbox"/> 1. NO <input checked="" type="checkbox"/> 2. YES (specify): Production facility.		

IV. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

X	A. TRANSPORTER	X	B. STORER	X	C. TREATER	X	D. DISPOSER
	1. RAIL		1. PILE		1. FILTRATION	X	1. LANDFILL
	2. SHIP	X	2. SURFACE IMPOUNDMENT	X	2. INCINERATION		2. LANDFARM
	3. BARGE		3. DRUMS		3. VOLUME REDUCTION		3. OPEN DUMP
	4. TRUCK		4. TANK, ABOVE GROUND		4. RECYCLING/RECOVERY		4. SURFACE IMPOUNDMENT
	5. PIPELINE		5. TANK, BELOW GROUND	X	5. CHEM./PHYS. TREATMENT		5. MIDNIGHT DUMPING
	6. OTHER (specify):		6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
					7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
					8. SOLVENT RECOVERY		8. OTHER (specify):
					9. OTHER (specify):		ORIGINAL (Red)

E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED
 lagoons. Presently pursuing EPA deregulation of sludge to allow for off site landfilling. Company stores RCRA regulated sludges on site in lagoons. Company operates an incinerator on site. Company operates a landfill on site for non-regulated incombustible material. Company operates a small quantity lab solvent evaporation bed. Residues are incinerated.

V. WASTE RELATED INFORMATION

A. WASTE TYPE
☐ 1. UNKNOWN ☒ 2. LIQUID ☒ 3. SOLID ☒ 4. SLUDGE ☐ 5. GAS

B. WASTE CHARACTERISTICS
☐ 1. UNKNOWN ☐ 2. CORROSIVE ☐ 3. IGNITABLE ☐ 4. RADIOACTIVE ☐ 5. HIGHLY VOLATILE
☐ 6. TOXIC ☐ 7. REACTIVE ☒ 8. INERT ☐ 9. FLAMMABLE
☐ 10. OTHER (specify): RCRA reg. haz. wastes leave site disposed of on site

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

Yes, Company and State Records.

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT 287	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT 16+
UNIT OF MEASURE tons/yr.	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE tons/yr.
X (1) PAINT, PIGMENTS	X (1) OILY WASTES	X (1) HALOGENATED SOLVENTS	X (1) ACIDS	X (1) FLYASH	X (1) LABORATORY PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGNTD. SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/ MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMLTG. WASTES	(4) MUNICIPAL
X (5) OTHER (specify): cellulose off site disposal			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES	X (5) OTHER (specify): ferrous metals 3/tons yr. non-ferrous metals 1 ton/yr. incinerator ash 12 tons/yr. off spec anionic polymers - occasional
			(6) CYANIDE	(6) OTHER (specify):	
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			(10) METALS		
			(11) OTHER (specify):		

V. WASTE RELATED INFORMATION (continued)

3. LIST SUBSTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE (place in descending order of hazard).

metals
incinerator ash

4. ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

ORIGINAL
(Red)**VI. HAZARD DESCRIPTION**

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo., day, yr.)	E. REMARKS
1. NO HAZARD	X			
2. HUMAN HEALTH				
3. NON-WORKER INJURY/EXPOSURE				
WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER				
8. CONTAMINATION OF SURFACE WATER				
9. DAMAGE TO FLORA/FAUNA				
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL				
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS				
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS				
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
22. OTHER (specify):				

VII. PERMIT INFORMATION

A. INDICATE ALL APPLICABLE PERMITS HELD BY THE SITE.

- ☒ 1. NPDES PERMIT ☐ 2. SPCC PLAN ☒ 3. STATE PERMIT (specify): SDH - 156
☐ 4. AIR PERMITS ☐ 5. LOCAL PERMIT ☐ 6. RCRA TRANSPORTER
☒ 7. RCRA STORER ☒ 8. RCRA TREATER ☒ 9. RCRA DISPOSER
☒ 10. OTHER (specify): RCRA Generator VAD003121928

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B. IN COMPLIANCE?

- ☒ 1. YES ☐ 2. NO ☐ 3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number):

VIII. PAST REGULATORY ACTIONS

- ☒ A. NONE ☐ B. YES (summarize below)

IX. INSPECTION ACTIVITY (past or on-going)

- ☐ A. NONE ☒ B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION
State Compliance	Routine	State	Landfill inspection.

X. REMEDIAL ACTIVITY (past or on-going)

- ☒ A. NONE ☐ B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.

WORK SHEET FOR RATING DISPOSAL SITES

Name of Site: Hercules, Incorporated Plant Landfill active inactive & abandoned
 Location: Hopewell, PA inactive (CIRCLE ONE)
 Owner/Operator: Hercules, Incorporated ORIGINAL
 Comments: Site is a permitted landfill that receives non-hazardous waste only. (Red)
No problem has been associated with site.

Prepared By: Garth Glenn On February 26, 19 82

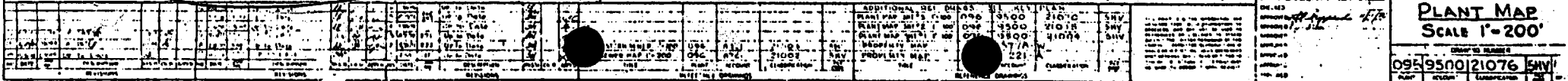
FACTOR	OBSERVATION
RECEPTORS	
Population within 1000 feet	3
Distance to Nearest Drinking Water Well	>3 miles
Distance to Nearest Off-Site Building	1/4 mile
Land Use/Zoning	industrial
Critical Environment	minor wetlands
Use of Site by Residents	no
Use of Nearest Buildings	production facility
Presence of Public Water Supplies	city water intakes in different basin
Presence of Aquifer Recharge Area	no
Presence of Transportation Routes	no
Presence of Important Natural Resources	no
Other	
PATHWAYS	
Evidence of Contamination	no
Type of Contamination	not applicable
Level of Contamination	not applicable
Distance to Nearest Surface Water	1,000 feet
Depth to Ground Water	20-40 feet
Net Precipitation	+2 inches
Soil Permeability	moderate
Bedrock Permeability	moderate
Depth to Bedrock	>5 feet (unconsolidated)
Erosion and Runoff Problems	no
Susceptibility to Flooding	no
Slope Instability	no
Seismic Activity	no
Other	

WORK SHEET FOR RATING DISPOSAL SITES

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FACTOR	OBSERVATION
WASTE CHARACTERISTICS	
Toxicity	no
Persistence	high - metals
Radioactivity	no
Ignitability	no
Reactivity	no
Corrosiveness	no
Solubility	no
Volatility	no
Physical State	solid
Infectiousness	no
Bioaccumulation Potential	no
Carcinogenicity, Teratogenicity and Mutagenicity	no
Other	
WASTE MANAGEMENT PRACTICES	
Site Security	yes
Hazardous Waste Quantity	zero
Total Waste Quantity	300 tons/yr
Waste Incompatibility	no
Use of Liners	no
Use of Leachate Collection Systems	no
Use of Gas Collection Systems	no
Use and Condition of Containers	no
Lack of Safety Measures	no
Evidence of Open Burning	no
Dangerous Heat Sources	no
Inadequate Waste Records	no
Inadequate Cover	no
Other	

820121-19



ORIGINAL
(Red)

(WESTOVER) 4132
5558 I SW

1.7'30"

GARYSVILLE 6 MI.
SURRY 28 MI.

4128

127

DUMPSITE SUMMARY SHEET

TDD No. F3-8201-21

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1. Name and location of site: Hercules, Incorporated
Hopewell, VA
Plant Landfill

2. EPA Case Number: VA-46

3. Status of Site (Active - Inactive - Abandoned): Active

4. Circle correct descriptions in parentheses:

The site (presently) - previously but not longer - never - unknown)
(generates - stores - transports - offers for transport - treats -
disposes of) hazardous waste.

5. RCRA Section 3010 notification - check status:

a. A 3010 notification (has) - has not) been filed

b. EPA ID Number: VAD003121928

c. Notified as a (generator - TSD Facility - both).

6. Describe, or list by four digit numbers shown on RCRA 3010 notification if appropriate, the hazardous wastes handled on site: _____

RCRA regulated wastes are stored on site and offered for transport off site
according to applicable regulations. Waste treatment sludges, initially
classified as hazardous by Hercules, have been tested according to Federal Regs.
and don't meet the characteristics for hazardous waste as defined in the
Fed. Regs. Subpart C. Hercules has petitioned the EPA for permission to dispose
of the sludges in a permitted landfill.

7. Status of case in dump site program:

PS - (PA) - SI - TD - FS - Referral - Filed

8. Brief summary of potential environmental problems associated with the site:

Only on site disposal is of non-hazardous material. Disposal is in such a way
as to not cause environmental concerns.

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REFERENCES

1. Virginia Department of Health Files.
2. Hercules, Incorporated - Richard Marks, Thomas Kirtley and Russ Omate.
3. Observations.
4. S.C.S. & U.S.G.S.
5. Fred E. Hughes - City of Hopewell - Office of Engineering and Inspections.

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ecology and environment, inc.

8021 ROUTE 130, PENNSAUKEN, NEW JERSEY 08110, TEL. 609-665-1515

International Specialists in the Environmental Sciences

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TO: FILE

FROM: GARTH GLENN

DATE:

SUBJECT: HERCULES HOPWELL PLANT LANDFILL VA-46

The following information was gathered from the Commonwealth of Virginia, Department of Health, Division of Solid and Hazardous Waste files:

.Company address is as follows:

Hercules Incorporated

P. O. Box 271

Hopewell, VA 23860

Thomas Kirtly, Supervisor and Environmental Engineering

Phone: (804) 541-4395

.The Hercules Plant produces^s cellulose fiber products - FDA approved.

.March 29, 1974 Hercules Incorporated received a permit from the Health Department #156 to operate a 3-acre landfill on-site.

.This landfill is to accept noncombustible trash, metal, ^{incinerator} ~~incinerator~~ ash.

.The company also has on-site an inactive fill which was operated from 1926-1974.

.October 1978, the company received permission from the Health Department to dispose of 50,000 lbs. of hercofloc anionic polymer which is a copolymer made of acrylimide and acrylic acid which is used as a flocculant in waste water treatment plants. This 50,000 lbs. of hercofloc were buried in the North end of the landfill.

.Hercules has an incinerator on-site to dispose of combustible wastes.

.In 1976 Hercules Incorporated notified the Health Department that they were upgrading their landfill to include a drum crusher and new operating procedures for better utilization of the fill. Please see attached information.

.Company has a treatment system on-line which discharges to the Hopewell Regional Waste Water Treatment Plant. The sludges from this treatment are disposed of at Shoosmith Incorporated.

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.Please find a geological/hydrological assessment of landfill area in attached information.

.Please find attached a 1975 waste survey which includes waste type and disposal methods.

.Please find attached a map of the site.

.State DEpartment of Health records show that on routine inspections performed by that Division that the site has always meet good criteria for operations.

mjo

Attachments